

What Is Claimed Is:

1. A method for monitoring the performance reliability of a control unit (2) and/or at least one sensor (3 through 5) of a safety device (1) for the protection of vehicle occupants, comprising the steps:

- a) Recording of a negative acceleration and/or velocity and/or pressure, caused by an impact, in particular;
- b) Deriving a value for the impact severity from the recorded acceleration or the velocity or the pressure;
- c) Comparing the value for the impact severity to a predefined threshold value;
- d) Outputting an error-function signal in the event that the value of the impact severity exceeds the predefined threshold value, such error-function signal indicating that a proper functioning can no longer be ensured for the control unit (2) and/or for at least one sensor (3 to 5).

2. The method as recited in Claim 1, wherein an individual value for the impact severity is calculated for each control unit (2) and/or for each sensor (3 through 5) and compared to an individual predefined threshold value for the specific control unit (2) or the corresponding sensor (3 through 5).

3. The method as recited in one of the preceding claims, wherein the information from a plurality of impact processes is taken into consideration in determining the value for the impact severity of the control unit (2) or its predefined threshold value.

4. The method as recited in one of the preceding claims, wherein the predefined threshold value is lowered with increasing operating time of the safety device (1).

5. The method as recited in one of the preceding claims, wherein measurements from crash tests and/or calculations and findings derived therefrom are utilized to determine the predefined threshold value.

6. The method as recited in one of the preceding claims,

wherein the read-out and analysis of the output error-function signal is implemented by a service facility testing device and/or the control unit (2) itself.

7. A diagnostic device for monitoring the performance reliability of a control unit (2) and/or at least one sensor (3 through 5) of a safety device (1) for the protection of vehicle occupants, in particular using a method as recited in one of the preceding claims,

the diagnostic device being coupled to at least one sensor (3 to 5) of the safety device (1) to record an impact, and arranged in a motor vehicle together with the control unit (2) and at least one sensor (3 through 5);

including a comparator (7), which has at least one predefined threshold value for the proper functioning of the control unit (2) and/or at least one sensor (3 through 5), and which compares a value for the impact severity derived from an impact to the predefined threshold value;

including an output device (8), which outputs an error-function signal in the event that the value for the impact severity exceeds the threshold value, this signal indicating that the future proper functioning is no longer ensured for the control unit (2) and/or at least one sensor (3 through 5).

8. The diagnostic device as recited in Claim 7, wherein the functionality of the diagnostic device (6) is implemented in the control unit (2), either entirely or partially.

9. The diagnostic device as recited in one of Claims 7 or 8, wherein, for each control unit (2) and/or for each sensor (3 through 5), a threshold value is predefined that is typical for a control unit or a sensor.

10. The diagnostic device as recited in one of Claims 7 through 9, wherein the predefined threshold value(s) is/are lower than the threshold value provided for the triggering of a restraining means assigned to the control unit (2) or the sensors (3 through 5).